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EXAMINER

CARTER III, ROBERT E

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/520,363	Applicant(s) UCHIDA, HIDEKI	
	Examiner ROBERT E. CARTER III	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 1-18 in the reply filed on 12/10/2007 is acknowledged.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 9 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 9 states *the light emitting molecules contained in the light emitting layer are oriented so that a longitudinal axis of the light emitting molecules is generally parallel to a surface of the display panel on the panel back side and is generally perpendicular to a straight line along a direction in which the opening and the light receiving device are aligned when viewed vertically to the surface of the display panel"*

However, a line drawn between the opening in the back electrode and the light receiving device is not perpendicular to the display surface in any of the figures, nor is this limitation described in the specification.

Therefore, due to the amendment, claim 9 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement.

For purposes of examination, it is assumed that the molecules are perpendicular to a line which is perpendicular to the plane of the display surface.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation *wherein a substantial portion of the light emitting device is coplanar with a substantial portion of the light receiving device*.

However, the term "a substantial portion" is not defined in the specification, and therefore is indefinite. When an object is bisected by a singular plane, only two measurements are produced regarding the portion of the object in the plane. The first is the area of the object in the plane, and the second is the perimeter of that area in the plane. For purposes of examination, the examiner assumes area is the measurement used. Furthermore, the examiner defines "a substantial portion" to be any cross-sectional area greater than 50% of the largest cross-sectional area possible for a given object.

Claims 2-18 are rejected as being dependent upon a rejected base claim.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, and 6-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamazaki et al. (US Patent # 7,030,551).

As for claim 1, Yamazaki et al. teaches:

A display apparatus (Fig. 5), comprising: a display panel (Fig. 1, #101, Fig. 5, #101) including a light emitting device (Fig. 2, #106, Fig. 18B #4203) for each of a plurality of pixels (Fig. 1, #102, Fig. 2, #102) for displaying an image by using light that is output from the light emitting device toward a panel front side (the display of Yamazaki et al. emits light from both sides of the display and therefore any displayed image is viewable from both sides of the display);

a light receiving device (Fig. 2, # 113, Fig. 18B, #4211) provided on the display panel for each of the plurality of pixels for receiving a portion of light output from the light emitting device toward a panel back side that is reflected by an irradiated object (Fig. 18B, #4212) located on the panel back side (Col. 3, lines 8-9, Fig. 18B clearly shows the light being emitted towards the panel back side and then reflected by the irradiated object 4212 back towards the photodiode 4211);

wherein a substantial portion of the light emitting device is coplanar with a substantial portion of the light receiving device (the entire bottom of the light emitting device in Yamazaki et al. is clearly coplanar with the entire top of the light receiving device. Furthermore, the orientation of the plane in which the two devices are coplanar is not defined in the claims. Therefore, a multitude of planes can be defined in which the light emitting and light receiving devices of Yamazaki et al. are coplanar).

As for claim 2, Yamazaki et al. teaches:

wherein the display panel is an active matrix type display panel (Col. 1, lines 15-16) including a substrate (Fig. 18B, # 4001) and a light emission control section (4202) provided on the substrate for controlling light emission of the light emitting device (Col. 33, line 19), with the light emitting device and the light receiving device being provided on the substrate (Col. 3, lines 3-4).

As for claim 4, Yamazaki et al. teaches:

wherein the display panel includes a light blocking layer (Fig. 16, #280, Col. 31, lines 57-65) provided between the light emitting device and the light receiving device (the light blocking layer 280 clearly blocks any non-reflected light emitted from the light emitting device from reaching the light receiving device, and therefore is provided between the light emitting device and light receiving device).

As for claim 6, Yamazaki et al. teaches:

wherein the light emitting device includes a light emitting layer (Fig. 18B, #4204) containing light emitting molecules (the light emitting layer inherently must contain light emitting molecules), and a pair of electrodes (Fig. 18B, #4203, 4205) opposing each other via the light emitting layer therebetween (Col. 2, lines 56-59).

As for claim 7, Yamazaki et al. teaches:

wherein one of the pair of electrodes that is provided on the panel back side is made of a transparent conductive material (Col. 33, lines 28-34).

As for claim 11, Yamazaki et al. teaches:

wherein the light emitting device is an organic electroluminescent device (Col. 2, lines 7-9, 24-27).

As for claim 12, Yamazaki et al. teaches:

wherein the display panel is flexible (Col. 37, lines 30-36).

As for claim 13, Yamazaki et al. teaches:

The display apparatus further comprising a storage device (Fig. 14B, #304) for storing image information that is read by the light receiving device receiving light reflected by the irradiated object. (Col. 23, line 4).

As for claim 14, Yamazaki et al. teaches:

wherein the display apparatus has a function of displaying image information that is read by the light receiving device receiving light reflected by the irradiated object (Col. 15, lines 34-40).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al. (US Patent # 7,030,551) in view of Tsunekawa et al. (US Patent # 4,366,501).

As for claim 3, Yamazaki et al. teaches:

wherein the display panel includes a color filter (Col. 14, lines 32-34)

Yamazaki et al. does not explicitly teach the color filter overlapping a portion of the light receiving device.

In the same field of endeavor (i.e. image recorders using light receiving devices)

Tsunekawa et al. teaches:

wherein the...panel (Fig. 1a, #2, 3, 4) includes a color filter (Fig. 1a, #4) provided so as to overlap with at least a portion of a light receiving surface of the light receiving device (Col. 4, lines 48-65).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the light receiving devices of Yamazaki et al. with the light receiving devices covered by color filters in Tsunekawa et al., to obtain a standard color signal from the light receiving device array (Tsunekawa et al., Col 4, lines 50-58).

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al. (US Patent # 7,030,551) in view of Street et al. (US Patent # 5,920,401).

As for claim 5, Yamazaki et al. teaches all the claimed limitations of claim 1.

Yamazaki et al. does not teach a light converging section.

In the same field of endeavor (i.e. displays with light receiving devices) Street et al. teaches:

A display apparatus, comprising:

A display panel including a light emitting device (Fig. 4, # 126) for a plurality of pixels (Fig. 4, # 102) for displaying an image by using light that is output from the light emitting device toward a panel front side; and

a light receiving device (Fig. 4, # 132) provided on the display panel for each of the

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plurality of pixels for receiving a portion of light output from the light emitting device toward a panel back side that is reflected by an irradiated object (Fig. 4, # 10) located on the panel back side.

Wherein the display panel includes a light converging section (Fig. 4, # 130) provided on the panel back side of the light emitting device.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the display device of Yamazaki et al. with the light converging section of Street et al., to increase the sensitivity and thus reduce the fractional area of the light receiving devices (Street et al., Col 7, lines 29-38).

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al. (US Patent # 7,030,551).

As for claim 8, Yamazaki et al. teaches all the limitations of claim 6.

Yamazaki et al. further teaches that the rear electrode structure is transparent (Col. 33, lines 28-34).

Yamazaki et al. does not teach the back side electrode including an opening.

At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to include an opening in the back side electrode because Applicant has not disclosed that including an opening in the back side electrode provides an advantage, is used for a particular purpose, or solves a stated problem. Furthermore, one of ordinary skill in the art would have expected

Applicant's invention to perform equally well with either the transparent rear electrode taught by Yamazaki et al. or the claimed rear electrode including an opening because both perform the same function of a rear electrode which lets light pass through them.

8. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al. in view of Imanishi (US Publication # 2002/0061418).

As for claim 9, Yamazaki et al. teaches all the limitations of claim 8.

Yamazaki et al. does not teach the light emitting molecules being oriented in a particular direction.

In the same field of endeavor (i.e. electroluminescent display devices) Imanishi teaches that the state of optimum molecule orientation varies according to the light emission level used, and that once a state of excitation is selected, one can determine the optimum molecule orientation direction corresponding to that state (Fig. 2a, [0126]).

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to optimize the molecule orientation direction and state of excitation of the electroluminescent display device in Imanishi such that *the light emitting molecules contained in the light emitting layer are oriented so that a longitudinal axis of the light emitting molecules is generally parallel to a surface of the display panel on the panel back side and is generally perpendicular to a straight line along a direction in which the opening and the light receiving device are aligned when*

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viewed vertically to the surface of the display panel to maximize discharge efficiency of the display in the direction in which it is normally viewed (Imanishi, [0180]).

Therefore, it would have been obvious to one of ordinary skill in the art to modify the electroluminescent display of Yamazaki et al, by optimizing the orientation direction of the molecules for a given state of excitation as in Imanishi such that the longitudinal axis of the light emitting molecules is generally parallel to a surface of the display panel, to increase the discharge efficiency of the display device in the direction in which it is normally viewed (Imanishi, [0180]).

As for claim 10, Yamazaki et al. teaches:

wherein a light emitting portion of the light emitting layer is localized toward the electrode including the opening therein (the portion of the light emitting layer located closest to the electrode including the opening therein is, by it's proximity to this structure, localized towards it).

9. Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al. (US Patent # 7,030,551) in view of Kiyohara (US Patent # 5,327,503).

As for claim 15, Yamazaki et al. teaches all the claimed limitations of claim 14.

Yamazaki et al. does not teach displaying read image information in an inverted position.

In the same field of endeavor (i.e. displays with light receiving devices) Kiyohara teaches:

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A display device including a display panel (Fig. 1, # 11), an image scanner (Fig. 1, # 12), and a CPU (Fig. 6, # 32).

Kiyohara further teaches that after an image is scanned, it is processed by the CPU (Col. 1, lines 54-56), and that these processes can include inversion of the image (Col. 8, lines 42-47).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the display device of Yamazaki et al. with the CPU and image processing ability of Kiyohara, allow documents to be easily checked and corrected (Kiyohara, Col. 3, lines 1-4).

Combining Kiyohara and Yamazaki teaches:

wherein the display apparatus also has a function of displaying the read image information in an inverted position.

As for claim 16, Yamazaki et al. teaches:

An image reading/displaying system, comprising: the display apparatus of claim 15; and a display medium (Fig. 18B, #2404) to which the image information is written by the display apparatus displaying the read image information (Col. 15, lines 34-40).

As for claim 17, Yamazaki et al. teaches:

wherein the display medium includes a display medium layer (Fig. 18B, #2404), a pair of electrodes (Fig. 18B, #4203, 4205) opposing each other via the display medium layer therebetween (Col. 2, lines 56-59), and a photoconductive layer (Fig. 18B, #4211) provided on a display medium layer side of one of the pair of electrodes.

As for claim 18, Yamazaki et al. teaches:

The image reading/displaying system of claim 17, wherein a voltage (Fig. 1, Vx) is applied to the pair of electrodes of the display medium by using a power supplied from the display apparatus (A power supply is a well known feature that is inherently required to provide the voltage to voltage line Vx).

Response to Arguments

10. Applicant's arguments filed on 08/16/2007 have been fully considered but they are not persuasive.

Regarding the 35 U.S.C. 112, second paragraph rejection of claim 9, Applicant argues:

"The Section 112 rejection of claim 9 has been addressed and overcome by the changes to claim 9 above."

However, Applicant's amendment to claim 9 necessitated a new rejection of claim 9 under 35 U.S.C. 112, first paragraph.

Regarding claim 1, Applicant argues:

"Claim 1 as amended requires "wherein a substantial portion of the light emitting device is coplanar with a substantial portion of the light receiving device." For example and without limitation, see Fig. 1 of the instant application• Yamazaki fails to disclose or suggest this feature of claim 1, because in Fig. 14B of Yamazaki the light emitting device 269 is on an entirely different plane than the light receiving element 306, thereby teaching away from the invention of claim 1."

However, applicant has not defined “a substantial portion” or the orientation of the plane in which the light emitting and light receiving devices are coplanar, therefore these limitations are currently rejected under 35 U.S.C. 112, second paragraph. Furthermore, Figure 18b of Yamazaki et al. clearly teaches a substantial portion of the light emitting device being coplanar with a substantial portion of the light receiving device.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT E. CARTER III whose telephone number is (571)270-3006. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on 571-272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sumati Lefkowitz/
Supervisory Patent Examiner, Art Unit 2629

/R.E.C./